

TRACER DETECTION TECHNOLOGY CORP.

PRODUCTS AND SERVICES FOR CORPORATE AND GOVERNMENT SECURITY

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ATTN: TECHNOLOGY TRANSFER QUESTIONS.

Response to Request for Information – Federal Register **“The Costs and Benefits of Dealing with Federal Laboratories”**

This “white paper” is intended to deal constructively with issues relating to technology transfer and interaction of small businesses with federal laboratories, and should be considered a response to #6 (other). As a small businessman and entrepreneur engaged in the commercialization of technologies initially developed at Department of Energy laboratories, and as a technology transfer practitioner with nearly twenty years of experience, I believe that my insights, comments and suggestions merit consideration.

Overview

In 1990-91, I served as the program manager for a “Technology Transfer Personnel Exchange Program” funded by the Department of Energy. As a Research Professor for Technology Transfer at the State University of New York College of Technology (Farmingdale, N.Y.), a relationship developed with the representatives of the Office of Technology Transfer at Brookhaven National Laboratory. These discussions led to meetings with a scientist whose air measurement technology (the “technology”) had never been developed commercially.

The “*experiment*” was to assess the effect of superimposing an entrepreneurial business development approach on an apparently difficult to commercialize technology. Based on early progress, a proposal was submitted to conduct a Technology Personnel Exchange Program with SUNY Farmingdale as the academic conduit to industry to the U.S. Department of Energy. Positioned as the “*strategic bridge*” between SUNY Farmingdale, Brookhaven National Laboratory and Long Island industry, the effort was designed to accelerate the process of technology transfer through catalytic, management tactics. Specifically, the program planned to “extend the limits” of the more traditional “*ferret*” models that had been evaluated prior to that. This innovative program matched “technology need with technology solution” based on a knowledge of regional industrial core competencies and the functional applications of selected federally funded technologies. Strategic partnerships in which new technologies would be used by industry were then formed, based on the Technology Delivery System model [the concept of the Technology Delivery System was initially described by Dr. Arthur A. Ezra in his article, “Technology Utilization: Incentives and Solar Energy” which appeared in the February 28, 1975 edition of Science Magazine].

The technology transfer staff emphasized the profit, business building aspects of the effort, recognizing that motivation and creativity were often lacking in the traditional technology transfer model. The resulting program was a radical departure from traditional models by encouraging entrepreneurial and small business involvement at a very early stage. These activities were focused on developing environmental restoration and remediation technologies, new material by-products and the above mentioned air measurement, tracing technique. Although deemed "successful," no follow-on funding was provided, and the continuation of the activity was left to entrepreneurial resources.

Subsequently, as President of Tracer Detection Technology Corp. ("Tracer"), I have had considerable experience dealing with federal laboratories. In the early years, the Final Report from the initial personnel exchange program was met with limited response and gained similarly limited exposure and distribution. In 1995, I also presented papers on the subject of Technology Transfer to the Technology Transfer Society and to the IEEE Dual Use Technologies Conference. Most recently, in September 2008, I was afforded the opportunity to deliver the Keynote presentation at the Northeast Regional Meeting of the Federal Laboratory Consortium at Brookhaven National Laboratory on the subject of "Small Business Interactions with Federal Laboratories."

About Tracer Detection Technology Corp.

The Company has negotiated multiple licenses for federally funded research, and currently maintains an exclusive license to two patents developed at Oak Ridge National Laboratory (ORNL) for the Dichroic Fiber counterfeit detection technology. Tracer has also done work with the Natick Army Research Lab Soldier Center under a separate CRADA. Additionally, with funding from the Department of Justice, National Institute of Justice, Tracer has performed a demonstration under a negotiated CRADA with ORNL for its chemical tagging technology (please see below for a discussion of Tracer's most recent efforts with Department of Energy laboratories under a program funded by the Department of Defense).

Tracer has built an extensive intellectual property portfolio for its counterfeit detection technology based on the two licensed patents from ORNL. Tracer has five issued and six pending patent applications of its own covering two technology areas; a) a counterfeit detection system based on random patterns of optically readable materials matched to a machine readable code (licensed) and b) a chemical based track, trace and locate system. Although the Office of Naval Research is funding Tracer's chemical tagging program, the Company is still working to complete commercialization of the counterfeit detection technology (see Attachment "A" for a discussion of the "merits" of the initial license agreement).

Separately, but related to this, Tracer also entered into licensing agreements with ORNL in the sensor area for various applications of the Microcantilever sensor technology (including an exclusive license for the detection of the chemical taggant as well a non-exclusive license for the detection of explosives and an option on a non-exclusive license to detect various chemical and biological agents). For budgetary reasons, all of the Microcantilever licenses were relinquished on May 15, 2001.

“The Costs and Benefits of Dealing with Federal Laboratories”

Description of the Issue

(a) After nearly two years of contact work and proposals, Tracer was awarded a contract from the Department of Defense, Office of Naval Research (ONR). The program objective was to develop and test an enhanced duration chemical tag in combination with a sensor system. During the program, feasibility testing was performed on various taggant forms and sensors. This program was completed successfully on time and on budget. Additional work is now expected under a contract extension.

To accomplish the goals of the program, Tracer’s team determined that the best available scientific talent to address the program challenges could be found within the national labs. Therefore, it decided to undertake Work for Others (WFO) agreements with three national laboratories, Idaho National Lab (INL), Brookhaven National Lab (BNL) and Oak Ridge National Lab (ORNL). Under the ONR program, each lab will perform specific tasks:

- INL was responsible for developing a set of chemical taggants
- ORNL and BNL were involved in testing and qualifying different types of sensors specific to the chemical taggant.
- Additionally, Tracer is subcontracting with two commercial sensor companies on this program.

The total budget is broken down as follows:

	Task Area	% Budget
Tracer Detection Technology	Program Mgt. & Systems Integration	20.3
Private Industry (2 companies)	Proximity Sensors	12.5
INL	Chemical Encapsulation	25.2
BNL	Stand-off Detection	25.3
ORNL	Proximity Sensor	16.7
Sub-Total National Labs		67.2

On the surface, the national labs’ percentage of the total budget might appear “in line” given their special expertise. However, important note must be given to the fact that the budget for each includes a multiplier mark-up for industrial CRADA and WFO partners for overhead and other indirect cost burdens of approximately 3.1. Essentially that means that over two-thirds of the total budget allocation to the labs is overhead and indirect burden.

While often it is emphasized that the National Labs possess unique expertise unavailable in industry, the question remains the extent to which Tracer, as the prime contractor, is constrained in its ability to bring additional resources to bear on the overall task by the arbitrarily high burden rates. Upon closer examination, the 3.1 factor mark-up on the scope of work includes costs for traditional overheads, fringe benefits, safeguards and security expenses, facility security and protection, and nuclear materials control and accountability (among other expenses).

Tracer is not disputing the fact that a “reasonable” overhead rate should be charged on all work performed at the national labs. The real issue however, is whether there should be a level of flexibility and discretion exercised in situations relating to small businesses, and especially for projects where certain elements of the burden rates are obviously not applicable. However, the impact of reducing the burden rate on the Tracer/ONR project from a factor 3.1 times to a more “reasonable” level of 1.9 times would result in the National Labs representing 41.1% of the total budget. Based on responses to Tracer’s request for quotes, this difference would have enabled the inclusion of two additional resources for exploring stand-off detection methods. Given the importance of the results of this program to the military and security missions envisioned, the additional resources would have clearly increased the likelihood of a successful outcome.

As small businesses typically do not need “nuclear” facilities, there are many technically-based costs that are not incurred and therefore do not require recovery. Further, both the Labs and small businesses would receive significant benefit from a lowered indirect cost burden directed towards small businesses. The small businesses would receive enhanced accessibility to the talents and emerging technologies being developed at the Labs, and the Labs would in return, receive a greater business volume from this market that would more than offset the loss in recovery costs. Given this position, we respectfully request that strong consideration and study be given to instituting a two-tier burden rate for work performed at national labs, with small businesses being given the competitive advantage originally intended by the technology transfer legislation to provide access to National Laboratory technologies to small businesses. Please see Attachment “B” for a summary of this topic.

(b) Tracer is a small business convinced that working with scientists from the National Labs would enhance the likelihood of success on the contract from the Office of Naval Research. However, it was troubling to learn that Department of Energy required a 90 day advanced payment before work could be performed. As discussed above, given the 9-month period of performance of the ONR contract and the budget exceeding \$600K allocated to the three labs, this additional burden of over \$200K was onerous and nearly resulted in the program not proceeding. Two of the labs were able to draw about internal funds to provide this “advance,” while the third could not. Tracer then advanced funds representing approximately 45 days. Given the 12-month duration of billing and reimbursement, this advance payment cost Tracer approximately \$2,000 in non-reimbursed interest expenses. One of the labs is part of the contract extension effort that is planned to span 27 months. Please see Attachment “C” for a summary of this topic.

We hope that this response to the Request for Information is considered as the process of technology transfer from the Department of Energy laboratories is evaluated.

Respectfully submitted



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ATTACHMENTS

ATTACHMENT “A”

Successful T2 or Not?

Was the Exclusive License for Dichroic Fiber technology – U.S. Patents #6,246,061 and #6,035,914 (August 1997) a good deal? And for whom?

Tracer has paid ORNL ~\$70K over the years

Not yet commercialized – Pending VC funding, Tracer will complete development of its reader within 9 months

Tracer has invested over \$350,000 in product development and filing of company patents: #5,974,150, #7,089,420, #7,162,035 plus 5 pending patents; Int'l protection in Canada, Mexico, UK, Europe, China, Japan

ATTACHMENT “B”

Issue #1: Lab Burden on Work for Others

Total Program Budget	\$ 926.8
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Total Budget for National Labs (Including 3.1x burden rate)	\$ 622.9
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National Laboratory % Program Budget	67.2
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Actual cost (excluding “3.1x” burden)	\$ 200.9
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Adjusted cost at “1.9x” burden	\$ 381.7
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Savings to total budget	\$ 281.3
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Net Program Impact????? Add'l Subcontractor

ATTACHMENT “C”

Issue #2: 90 Day Upfront Requirement

Contract was Fully-funded and Fully-Obligated

Idaho National Laboratory	233.1
Brookhaven National Laboratory	234.8
Oak Ridge National Laboratory	<u>155.0</u>
National Laboratory Sub-total	622.9
Total Contract Amount	926.8

Given 9-mo. Period of Performance, “requirement” = 207.6

Given delays in billing and reimbursement, this would cost Tracer ~ \$46,700 in interest during the contract period. INL and BNL came up with “pre-contract” funds. Oak Ridge could not do so. Tracer paid \$25,000 to ORNL during the contract, insufficient to complete the Statement of Work.